

# Staying in the loop

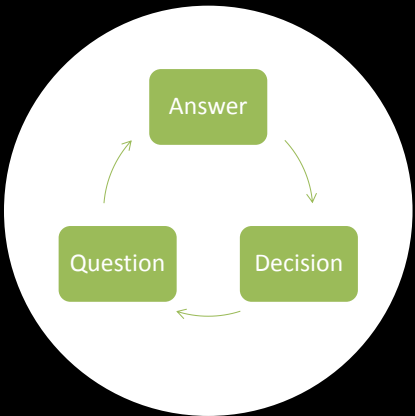
Fayette Klaassen

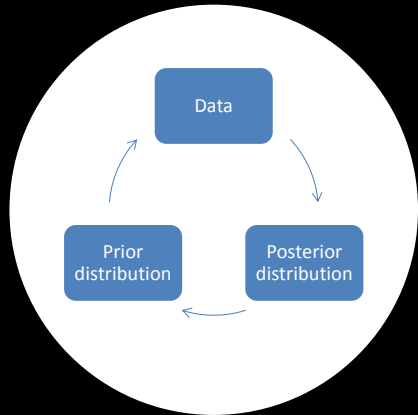
Department of Methodology and Statistics  
Utrecht University  
The Netherlands

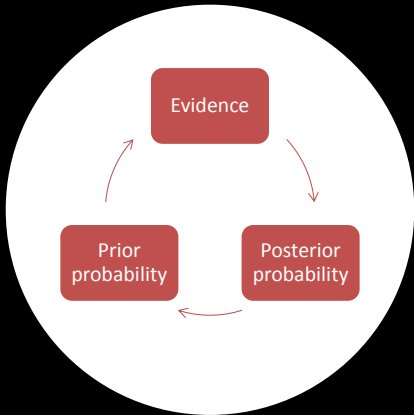
EAM 2018, Jena

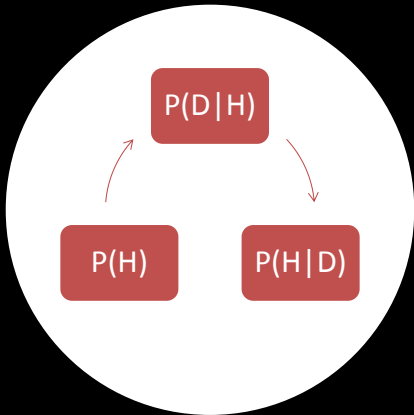
## Want to stay in the loop?

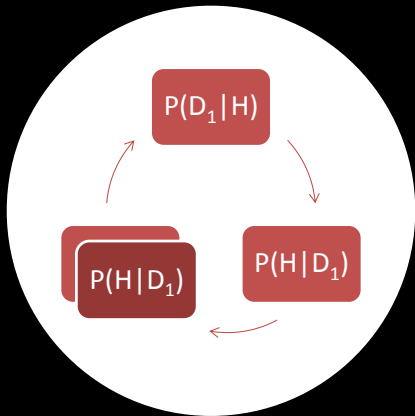
- ▶ `f.klaassen@uu.nl`
- ▶ `https://github.com/fayetteklaassen`

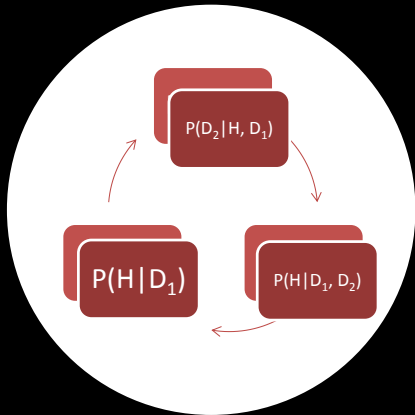















$$P(D_1|H)$$

$$P(H|D_0)$$

$$P(H|D_1)$$

What is  $P(H)$ ?

$$P(H|D_1, D_0) \approx P(H|D_0) \times P(D_1|H, D_0)$$
$$P(H|D_0) \approx P(H) \times P(D_0|H)$$

$P(H)$  = the possibility of a hypothesis = 'objective'

$P(D_0|H)$  = the plausibility of a hypothesis based on  
our ideas = 'subjective'



Tempting use only the possibility of H as  $P(H)$

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- ▶ Ignores specific choices made for hypotheses

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Tempting to use plausibility of H as  $P(H)$

- ▶ Ignores specificity/predictive value

Prior probability = prior 'weight'  
of **possibility** and **plausibility**

Acknowledge subjectivity



## Work in progress

- ▶ 'Prior data' elicitation
- ▶ Specify plausibility
- ▶ Rank hypotheses

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▶ [f.klaassen@uu.nl](mailto:f.klaassen@uu.nl)

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